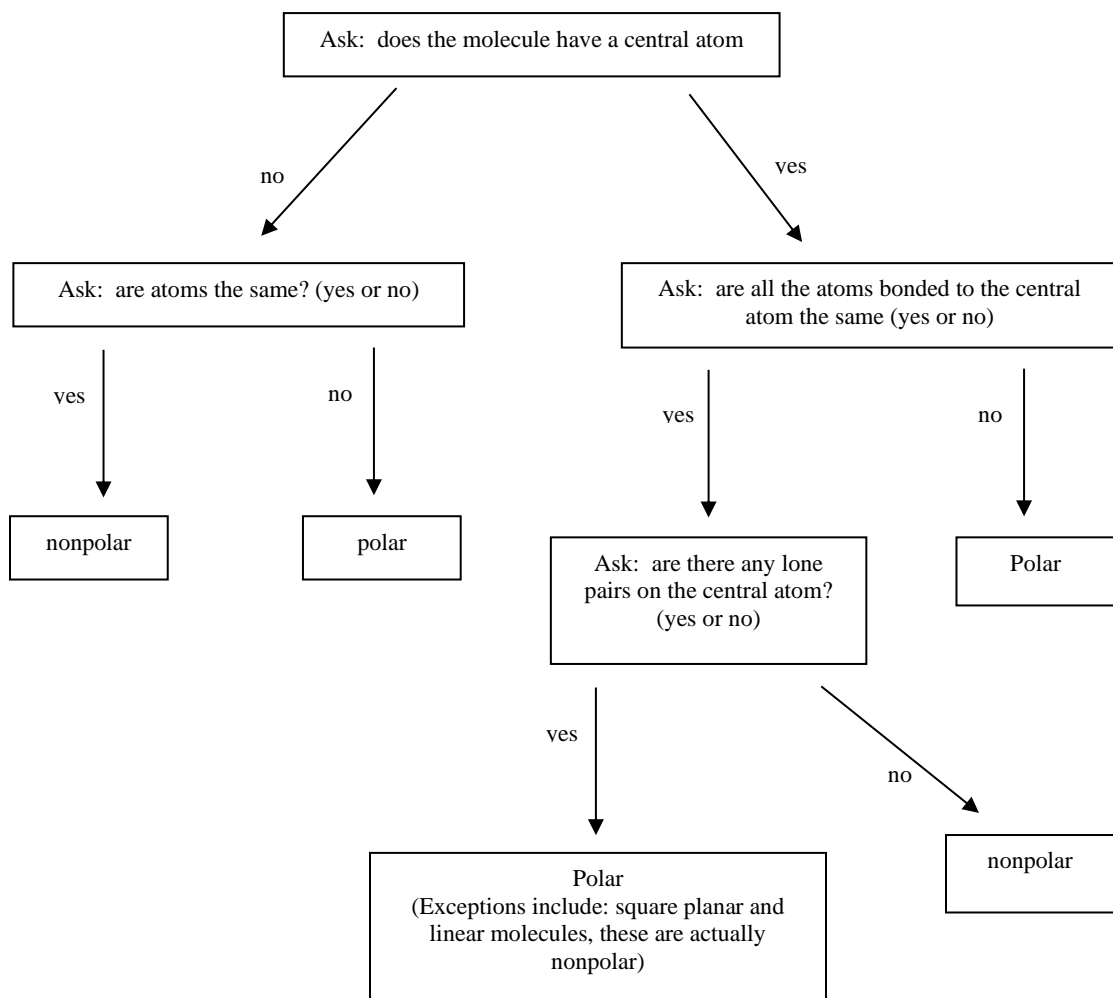


Name _____ Period _____

Skill 25.01 Problem 1

Arrange the following molecules from low to high with respect to dipole moment

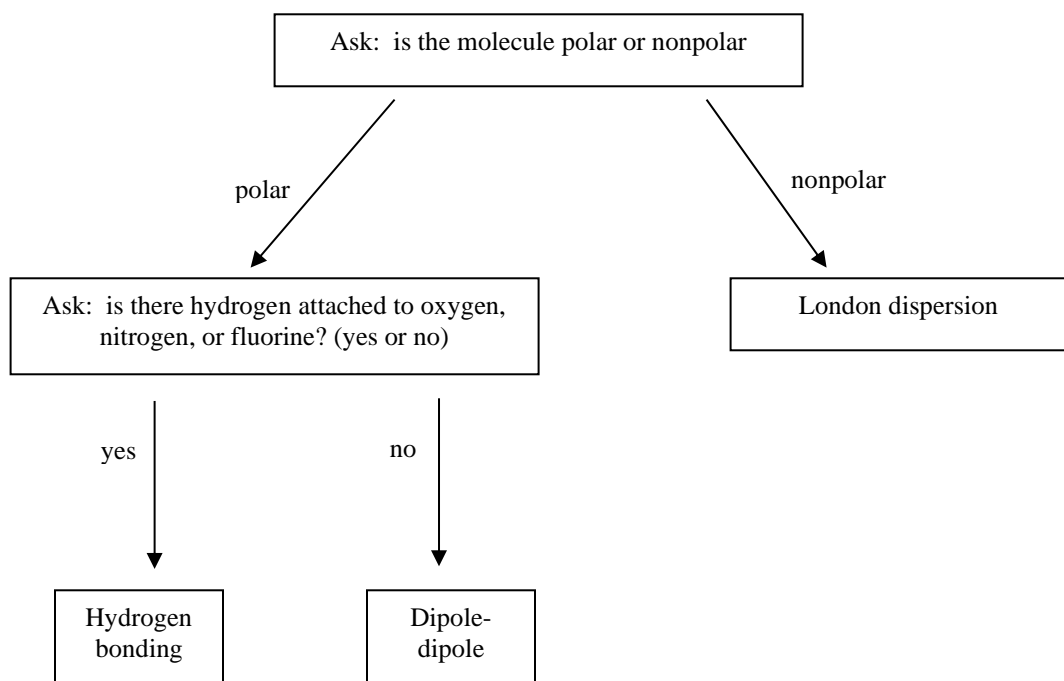
HF, HCl, HI, N₂



Name _____ Period _____

Skill 25.02 Problem 1

Draw the Lewis structures for the following molecules, then using the flow chart above, determine whether or not each molecule is polar or nonpolar	
(a) SO_2	(b) ClF_3
(c) CH_2F_2	(d) I_3^-



Name _____ Period _____

Skill 25.03 Problem 1

Draw the Lewis structures for the following molecules, then using the flow charts above, determine whether or not each molecule is polar or nonpolar along with the types of intermolecular forces of attraction it would be expected to experience.

- (a) BF_3
- (b) CH_3COCH_3
- (c) CH_3OH
- (d) XeF_2

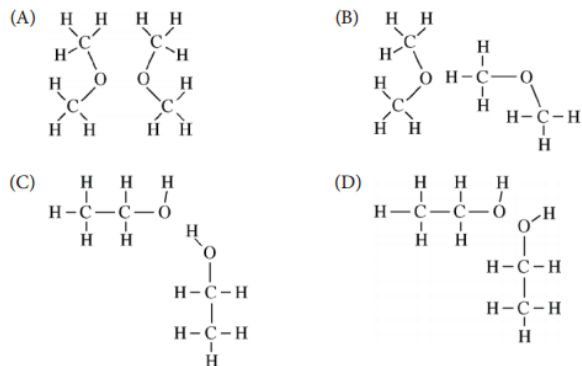
Name _____ Period _____

Skill 25.04 Problem 1

The structures and normal boiling points of dimethyl ether and ethanol are given in the table below.

Compound	Molecular Structure	Normal Boiling Point
Dimethyl ether	<pre> H H H - C - O - C - H H H </pre>	250 K
Ethanol	<pre> H H H - C - C - O - H H H </pre>	351 K

Which of the following diagrams best helps to explain the difference in boiling point of the two compounds? Justify your reasoning.



Skill 25.04 Problem 2

Arrange the following from low to high with respect to boiling point:

CO₂, N₂, H₂, O₂, I₂

Name _____ Period _____

Skill 25.04 Problem 3

Rank the following compounds from low to high with respect to boiling point. Justify your reasoning.

Compound	Formula
Propane	$\text{CH}_3\text{CH}_2\text{CH}_3$
Propanone	CH_3COCH_3
1-propanol	$\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$

Skill 25.04 Problem 4

If the pressure of each gas is increased at constant temperature until condensation occurs, which gas will condense at the lowest pressure? In each case, justify your answer.

- (A) Methane (CH_4)
 (B) Ethane (CH_3CH_3)
 (C) Butane ($\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$)
 (D) All the gases will condense at the same pressure.

